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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,452	11/16/2001	* Satoshi Aoyagi	SIW-022	5172
959	7590	09/18/2006		
LAHIVE & COCKFIELD 28 STATE STREET BOSTON, MA 02109			EXAMINER WALKER, KEITH D	
			ART UNIT 1745	PAPER NUMBER
DATE MAILED: 09/18/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/988,452

Applicant(s)

AOYAGI ET AL.

Examiner

Keith Walker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 18-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 35 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

Claims 1-36 are pending in the application and claims 18-34 are withdrawn.

Claims 1-17, 35 & 36 are pending examination.

Claim Objections

Claims 9-12 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitations set forth in the claims are already present in the parent claims. Both the sets of claims are drawn to a reacting gas supply system having a response time set below (or shorter) than the output assistance operation period of the electric double layer capacitor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-17, 35 & 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al. (5,964,309), in view of JP 08-214452 (Takeshi).

Kimura teaches a power supply system with a stack of fuel cells connected to a storage battery in parallel. The reacting gases are supplied to the fuel cell in amounts

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based on the estimated output of the fuel cell, the charge of the storage battery, and the amount of power required by a load. The feed amount includes the amount required for providing the required power to the load and a feed adjustment based on the charge state of the storage battery. The storage battery may be charged by the fuel cell and/or supply energy to the load in addition to that supplied by the fuel cell (Figs. 1 & 7, Abstract). The fuel cell system determines the amount of reactants needed to supply the fuel cell based on the charge-discharge state of the battery. Thus, if the battery is in short supply of power, then a larger supply of reactants to the fuel cell is needed to overcome the shortage of reserve power in the battery (2:45-3:31). Reactant gases are supplied to the fuel cell based on target values of the motors and machinery used with an electric vehicle (8:15-41).

However, Kimura fails to teach a capacitor that is directly connected to the fuel cell.

Takeshi teaches a hybrid power system in which batteries or electric double capacitors are charged by a fuel cell and provide additional power to a load ([0002-0004], [0010]). The current-voltage characteristics of the fuel cell and of the energy storage device (whether it be a battery or capacitor) inherently depend on their respective internal resistances (Ohm's Law: $V=IR$). The system evaluates the internal resistance of the capacitor and increases the reactants of the fuel cell to overcome the resistance of the capacitor ([0018-0019]). The capacitor is used to supply a temporary supplemental amount of power to the load due to an increase in the power requirements (Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to would have recognized the ability of an electric double capacitor in the hybrid system as taught by Takeshi to perform the same function as the storage battery in the fuel cell power supply system as taught by Kimura because batteries and capacitors are equivalent means to provide additional power to a load and to be charged by fuel cells.

Response to Arguments

Applicant's arguments filed have been fully considered but they are not persuasive. Applicant argues the claim objection to claims 9-12 are without merit since the limitations present in claims 9-12 are not recited in the parent claims. As expressed above, the language of claims 9-12 appear to recite the same limitations as the respective parent claim, in that both are drawn to a reacting gas supply system with a response time shorter than the output assistance operation period of the electric double layer capacitor.

Applicant argues the system of Kimura is not the same as the instant claims since the excess gas supplied is for not only the load but for charging as well. The additional load requirements of charging do not detract from the teachings of Kimura. As pointed out by applicant, Kimura prevents a gas shortage state during a charging load as well as the voltage for the current load. So the two loads collectively present one load on the fuel cell and the teachings of Kimura prevent a gas shortage state upon the variation in the load, the same as claimed by the instant application.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker


PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER